

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) An image processing method for performing color conversion among a plurality of image forming apparatuses, including a first printer and a second printer, comprising the steps of:

a) producing a plurality of color profiles provided for performing color conversion on input image information within a same color space or through different color spaces;

b) selecting a color profile from said plurality of color profiles; and

c) using said selected color profile to convert input color data, in a ~~standard computer monitor~~ RGB color space, to converted color data, in a device-dependent CMYK color space of said second printer, for reproducing colors obtained by said first printer by applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types, the color profile being generated by a process including

(d) producing, in a computer, color patch data from uniformly dividing a ~~standard~~ RGB color space ~~of a computer monitor~~;

(e) obtaining corresponding color patches in an image formed by a first image forming apparatus of an apparatus type of said first printer according to said color patch data in the ~~standard~~ RGB color space ~~of the computer monitor~~;

(f) measuring coordinate values of the color patches in the predetermined device-independent color space;

(g) obtaining a relationship, for each color patch, between the first color space which depends on the apparatus type of the first printer and the predetermined device-independent color space, based on a measurement result of (f);

(h) obtaining a relationship between the predetermined device-independent color space in an image formed by a second image forming apparatus of an apparatus type of said second printer and a second color space which depends on said apparatus type of said second printer; and

(i) calculating a coordinate value in the second color space which depends on the apparatus type of said second printer for each color patch whereby color of an image formed by said second printer has a color difference which is effectively reduced from color of an image formed by said first printer, according to the relationship between the predetermined device-independent color space in an image formed by said second printer and the second color space which depends on the apparatus type of said second printer, obtained in (h),

wherein color in an image formed by said second printer using said device-dependent input color data is visually equal to color of an image formed by said first printer using said converted device-dependent color data.

Claims 2-11 (canceled).

12. (currently amended) A program storage medium tangibly embodying instructions causing a computer to perform an image processing method for performing color conversion among a plurality of image forming apparatuses, including a first printer and a second printer, said image processing method comprising:

(a) producing a plurality of color profiles provided for performing color conversion on input image information within a same color space or through different color spaces;

(b) selecting a color profile from said plurality of color profiles; and

(c) using said selected color profile to convert input color data, in a ~~computer monitor~~ RGB color space, to converted color data, in a device-dependent CMYK color space of said second printer, for reproducing colors obtained by said first printer by applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types, the color profile being generated by a process including

(d) producing, in a computer, color patch data from uniformly dividing a ~~standard~~ RGB color space ~~of a computer monitor~~;

(e) obtaining corresponding color patches in an image formed by a first image forming apparatus of an apparatus type of said first printer according to said color patch data in the ~~standard~~ RGB color space ~~of the computer monitor~~;

(f) measuring coordinate values of the color patches in the predetermined device-independent color space;

(g) obtaining a relationship, for each color patch, between the first color space which depends on the apparatus type of the first printer and the predetermined device-independent color space, based on a measurement result of (f);

(h) obtaining a relationship between the predetermined device-independent color space in an image formed by a second image forming apparatus of an apparatus type of said second printer and a second color space which depends on said apparatus type of said second printer; and

(i) calculating a coordinate value in the second color space which depends on the apparatus type of said second printer for each color [[path]] patch whereby color of an image formed by said second printer has a color difference which is effectively reduced from color of an image formed by said first printer, according to the relationship between the predetermined device-independent color space in an image formed by said second printer and the second color space which depends on the apparatus type of said second printer, obtained in (h).

Claims 13-22 (canceled).

23. (currently amended) A computer readable medium tangibly embodying a program of instructions executable by a computer to perform a method for performing color conversion among a plurality of image forming apparatuses, including a first printer and a second printer, said method comprising:

(a) producing a plurality of color profiles provided for performing color conversion on input image information within a same color space or through different color spaces;

(b) selecting a color profile from said plurality of color profiles; and

(c) using said selected color profile to convert input color data, in a ~~computer monitor~~ RGB color space, to converted color data, in a device-dependent CMYK color space of said second printer, for reproducing colors obtained by said first printer by applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types, the color profile being generated by a process including

(d) producing, in a computer, color patch data from uniformly dividing a ~~standard~~ RGB

~~color space of a computer monitor;~~

(e) obtaining corresponding color patches in an image formed by a first image forming apparatus of an apparatus type of said first printer according to said color patch data in the standard RGB ~~color space of the computer monitor;~~

(f) measuring coordinate values of the color patches in the predetermined device-independent color space;

(g) obtaining a relationship, for each color patch, between the first color space which depends on the apparatus type of the first printer and the predetermined device-independent color space, based on a measurement result of (f);

(h) obtaining a relationship between the predetermined device-independent color space in an image formed by a second image forming apparatus of an apparatus type of said second printer and a second color space which depends on said apparatus type of said second printer; and

(i) calculating a coordinate value in the second color space which depends on the apparatus type of said second printer for each color ~~[[path]] patch~~ whereby color of an image formed by said second printer has a color difference which is effectively reduced from color of an image formed by said first printer, according to the relationship between the predetermined device-independent color space in an image formed by said second printer and the second color space which depends on the apparatus type of said second printer, obtained in (h).

Claims 24-33 (canceled).

34. (currently amended) An image processing apparatus comprising:

a color conversion part performing color conversion among a plurality of image forming apparatuses, including a first printer and a second printer; and

a plurality of color profiles whereby colors of images formed by the respective image forming apparatuses may be made effectively approximate each other through color conversion performed by said part with the use of the color profiles,

wherein said color conversion part uses a color profile from the color profiles to convert input color data, in a ~~standard-computer-monitor~~ RGB color space, to converted color data, in a device-dependent CMYK color space of said second printer, for reproducing colors obtained by said first printer by applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types, the color profile being generated by a process including:

(a) producing, in a computer, color patch data from uniformly dividing a ~~standard~~ RGB color space ~~of a computer monitor~~;

(b) obtaining corresponding color patches in an image formed by a first image forming apparatus of an apparatus type of said first printer according to said color patch data in the ~~standard~~ RGB color space ~~of the computer monitor~~;

(c) measuring coordinate values of the color patches in the predetermined device-independent color space;

(d) obtaining a relationship, for each color patch, between a first color space which depends on the apparatus type of the first printer and the predetermined device-independent color space, based on a measurement result of (c);

(e) obtaining a relationship between the predetermined device-independent color space in

an image formed by a second image forming apparatus of an apparatus type of said second printer and a second color space which depends on said apparatus type of said second printer; and

(f) calculating a coordinate value in the second color space which depends on the apparatus type of said second printer for each color patch whereby color of an image formed by said second printer has a color difference which is effectively reduced from color of an image formed by said first printer, according to the relationship between the predetermined device-independent color space in an image formed by said second printer and the second color space which depends on the apparatus type of said second printer, obtained in (e).

35. (original) The image processing apparatus as claimed in claim 34, wherein:

said plurality of color profiles are provided from actually measuring color of an image formed by one of said plurality of image forming apparatuses, and creating a color profile whereby color of an image effectively approximating the measured color is formed by another of said plurality of image forming apparatuses approximately equal thereto.

36. (original) The image processing apparatus as claimed in claim 34, wherein:

said plurality of color profiles comprise color profiles whereby a color difference in a color space which does not depend on apparatus types between images formed by the image forming apparatuses may be made to effectively approximate each other.

37. (original) The image processing apparatus as claimed in claim 36, wherein:

said color space which does not depend on apparatus types comprises any one of an LAB

color space, an XYZ color space and an LUV color space defined by CIE.

38. (original) The image processing apparatus as claimed in claim 34 comprising a printer driver provided in a host computer which outputs printing information to the image forming apparatus.

39. (original) The image processing apparatus as claimed in claim 34 comprising a controller provided in one of the plurality of image forming apparatuses which forms an image having color which is made to effectively approximate color of image formed by another of said plurality of image forming apparatuses with the use of the color profile.

Claim 40 (canceled).

41. (original) The image processing apparatus as claimed in claim 34, further comprising a part selecting a color profile to be applied from among the plurality of color profiles.

42. (original) The image processing apparatus as claimed in claim 41, wherein:
a host computer which provides printing information to the image forming apparatus comprises said part selecting a color profile to be applied from among the plurality of color profiles.

43. (original) An image forming apparatus comprising:

the image processing apparatus claimed in claim 34; and
an image forming part which forms a visible image on a recording medium based on
image information output from said image processing apparatus.

Claims 44-47 (canceled).